

NATURAL HISTORY RESEARCH REPORTS

Escape Behavior in Cuban Curly-tailed Lizards

Several aspects of escape behavior are predictable by escape theory based on expected costs due to predation risk and escaping. Although the function of pursuit-deterrent signaling is to dissuade predators from attack, relatively little is known about relationships between specific components of escape and the signaling behavior. COOPER (2007. *Herpetologica* 63: 144–150) studied effects of the risk factor distance from refuge on flight initiation distance, distance fled, probability of entering refuge, and the distance between predator (an approaching human) and prey when pursuit-deterrent display begins (display distance) in the Cuban Curly-tailed Lizard (*Leiocephalus carinatus*). The author also investigated whether starting distance (distance between predator and prey when approach begins) affects escape behaviors. As predicted by escape theory, flight initiation distance and distance fled were greater and refuge entry was less probable at greater distance from refuge, indicating that qualitative predictions of escape theory apply to pursuit-deterrent signalers. Starting distance did not affect escape behaviors, presumably because it did not affect perceived risk, but might do so at a faster approach speed. Display distance and flight initiation distance were identical in the data set analyzed, but individuals sometimes perform tail displays prior to fleeing.



JOHN BINNS

Tail-curling may serve as a pursuit-deterrent signal in Cuban Curly-tailed Lizards (*Leiocephalus carinatus*).

Native Predators May Limit Iguanas in Florida

Known predators of Green Iguanas (*Iguana iguana*) in Florida include Raccoons (*Procyon lotor*), domestic dogs (*Canis familiaris*), Yellow-crowned Night Herons (*Nyctanassa violacea*), Florida Burrowing Owls (*Athene cunicularia floridana*), and a hawk (*Buteo* sp.). Smith et al. (2007. *Journal of Kansas Herpetology* 23: 7–8) report nest predation and attempted adult predation on Green Iguanas by a Gray Fox (*Urocyon cinereoargenteus*) and suggest that avian and mammalian predators may potentially function as limiting factors on colonization patterns of exotic iguanas in Florida.



GARY H. BUSCH

A Gray Fox (*Urocyon cinereoargenteus*) excavating a Green Iguana (*Iguana iguana*) nest and eating the eggs at Hugh Taylor Birch State Park in Broward County, Florida.

Survival of Timber Rattlesnakes (*Crotalus horridus*)

Juvenile survival is one of the least known elements of the life history of many species, in particular snakes. BROWN ET AL. (2007. *Copeia* 2007: 656–671) conducted a mark-recapture study of Timber Rattlesnakes (*Crotalus horridus*) from 1978–2002 in northeastern New York near the northern limits of the species' range. They marked 588 neonates and estimated annual age-, sex-, and morph-specific recapture and survival rates. Wild-caught neonates (field-born, $n = 407$) and neonates produced by captive-held gravid females (lab-born, $n = 181$) allowed comparison of the birthplace, or lab treatment effect, in estimated survival. Recapture rates declined from about 10–20% over time while increasing from young to older age classes. Estimated survival rates ($S \pm 1$ SE) in the first year were significantly higher among field-born (black morph: $S = 0.773 \pm 0.203$; yellow morph: $S = 0.531 \pm 0.104$) than among lab-born snakes (black morph: $S = 0.411 \pm 0.131$; yellow morph: $S = 0.301 \pm 0.081$). Lower birth weights combined with a lack of field exposure until release apparently contributed to the lower survival rate of lab-born snakes. Subsequent sur-



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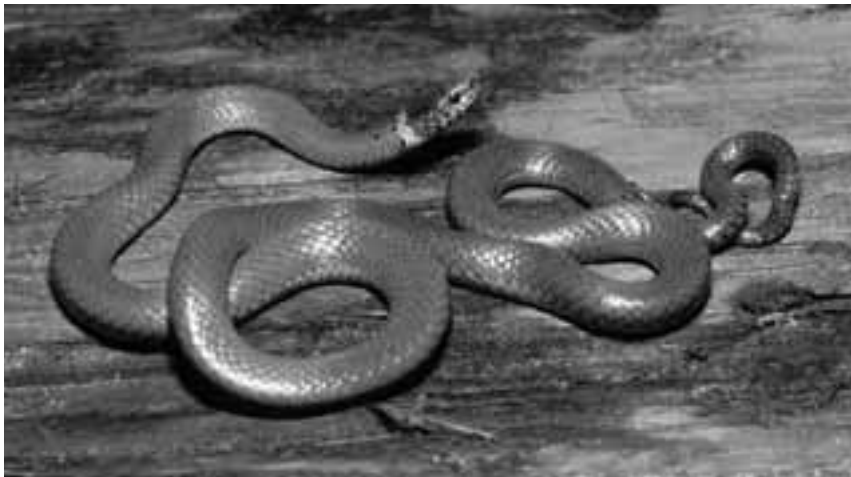
For young Timber Rattlesnakes (*Crotalus horridus*) (ages 1 yr and 2–4 yr), survival tended to decline over the years for both “yellow” and “black” morphs, whereas for adult snakes (> 5 yr), survival was constant or even increased slightly.

vival estimates for 2–4-yr-old snakes were $S = 0.845 \pm 0.084$ for the black morph and $S = 0.999$ (SE not available) for the yellow morph, and for > 5 -yr-old snakes $S = 0.958 \pm 0.039$ (black morph) and $S = 0.822 \pm 0.034$ (yellow morph). The most parsimonious model overall

contained an independent time trend for survival of each age, morph, and lab-treatment group. For snakes of the first two age groups (ages 1 yr and 2–4 yr), survival tended to decline over the years for both morphs, whereas for adult snakes (> 5 yr), survival was constant or even increased slightly. These data on survival and recapture are among the first rigorous estimates of these parameters in a rattlesnake and among the few available for any viperid snake. These data are useful for analyses of the life-history strategy, population dynamics, and conservation of this long-lived snake.

Ringneck Snakes are Toxic to Prey

Ringneck Snakes (*Diadophis punctatus*) are suspected of being venomous because their Duvernoy's gland secretions have high levels of phospholipase activity, which is characteristic of many viperid and elapid venoms, and because anecdotal reports of feeding behavior are consistent with the use of a venom. O'Donnell et al. (2007. *Toxicon* 50: 810–815) tested the toxicity of



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Northwestern Ringneck Snake (*Diadophis punctatus occidentalis*) oral secretions are toxic to a natural prey species, Northwestern Garter Snakes (*Thamnophis ordinoides*).

Northwestern Ringneck Snake (*D. p. occidentalis*) oral secretions to a natural prey species, Northwestern Garter Snakes (*Thamnophis ordinoides*), by injecting 2–35 μ l of oral secretions intraperitoneally. All doses were 100% lethal within 180 min. The dose significantly affected the time to loss of a right-

ing response. Neither injection of saline nor denatured oral secretions resulted in loss of a righting response or any visible detrimental effects. The authors suggested that Northwestern Ringneck Snakes may have evolved venom to subdue larger prey items than the snake would otherwise be capable of taking.

NEWS BRIEFS

Virginia Herpetological Society Publications On-line

The Virginia Herpetological Society has digitized all of its publications from 1958 to 2005, providing easy access to almost 50 years worth of field notes, articles, and the history of the society. Interested herpetologists are encouraged to access this resource at fwie.fw.vt.edu/VHS/ (or publications specifically at fwie.fw.vt.edu/VHS/vhs_history.htm).

Fourth Annual Sonoran Desert Herpetological Symposium

The Tucson Herpetological Society and its cosponsors are pleased to announce the fourth symposium on "Current Research on Herpetofauna of the Sonoran Desert" from 11–13 April 2008. The goals of this meeting are: (1) Presenting research on the herpetofauna of the Sonoran Desert (in the states of Arizona, Sonora, and on the Baja California Peninsula and gulf islands),

and (2) Bringing the interested community together to get better acquainted. Invited speakers are Harry Greene, Ed Moll, and Cecil Schwalbe.

The first three Sonoran Desert

Herpetofaunal symposia were an epiphany for many. These symposia revealed the wide variety of research being conducted in the area. For more information, see: <http://tucsonherpsociety.org/>.



THOMAS WIEBANDT, WILD HORIZONS

The Tucson Herpetological Society and cosponsors announce the fourth symposium on "Current Research on Herpetofauna of the Sonoran Desert."